

PE NUMBER: 0207133F

UNCLASSIFIED

PE TITLE: F-16 Squadrons

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 1999		
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0207133F F-16 Squadrons				PROJECT 2671		
COST (\$ In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
2671 F-16 Squadrons	94,631	139,631	112,520	93,058	53,961	40,992	66,341	98,259	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

The F-16 fighter aircraft program satisfies the need for modernization of the USAF and allied multimission tactical fighter forces. The F-16 is a single-engine, single-seat, multirole tactical fighter with full air-to-air and air-to-surface combat capabilities. The F-16 complements the F-15 in counter-air missions and is the primary aircraft in the surface attack role. The F-16C/D program develops, integrates, and qualifies systems to enhance the overall performance of the F-16 mission.

The F-16 program develops enhanced combat capability in both the air-to-ground and air-to-air role. Several modifications to improve the F-16's combat capabilities have been combined into a single modification known as the Common Configuration Integration Program (CCIP) to save significant costs during the production phase. CCIP will modify all Block 40 and Block 50 F-16 aircraft. CCIP integrates several programs under one umbrella and allows incorporation of AIM-9X onto the F-16:

- a. The main driver for CCIP will be the Link 16 program. Link 16 is a data link that connects main components of a battle arena to maintain awareness and to share battle management data. The Link 16 program designs the appropriate Group A (hardware mounted permanently on aircraft) to incorporate existing Group B (hardware that is easily removed from airplane) developed by the Multifunctional Information Distribution System (MIDS) Office and adapted for use on the F-16.
- b. To enhance the display of the Link 16 data, the current black and white display will be changed out with the Color Multifunction Display (CMFD) used by the European Participating Air Force's (EPAF) F-16s. Block 50 is developing the CMFD integration kit to meet USAF requirements. Block 40 will follow the Block 50 program.
- c. To have sufficient computing power in the Block 40/50 aircraft to operate Link16 and to allow the cost savings of using a common Operational Flight Program, the Modular-Mission Computer (MMC) has to be upgraded. The MMC is based on the computer that was developed for the EPAF Mid-life Update program. The Block 50 F-16 is developing the MMC for USAF requirements. Block 40 will follow the Block 50 program. The MMC will extend the cost effective life of the F-16 through replacement of three Line Replaceable Units and the addition of significant memory and processing growth provisions.
- d. The Joint Helmet Mounted Cueing System (JHMCS) incorporates a man-mounted, ejection capable helmet mounted display system, with capability to cue and verify cueing of high off-axis sensors and weapons. The F-16 JHMCS program will integrate the following government furnished equipment with the F-16: flight helmet with display optics, image source, helmet tracker transducer w/attached cable, graphics processor/video hardware and software to drive the display, helmet tracker hardware and software. The integration will interface with aircraft computers, weapons and sensor hardware and will provide software to integrate the JHMCS functions with other onboard systems.
- e. CCIP will also incorporate the previously developed On-Board Oxygen Generation System (OBOGS). However, OBOGS has been removed from the CCIP program for budgetary reasons.

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Other modifications which are being or will be developed during the FYDP:

- a. Advanced Weapons Integration will integrate Joint Direct Attack Munition (JDAM), Joint Stand-off Weapon (JSOW) and Wind Corrected Munition Dispenser (WCMD) smart weapons into the Block 40 and Block 50 F-16.
- b. Improved Airborne Video Tape Recorder (IAVTR) for Block 50 aircraft will replace the current black and white 30 minute recording capability with a two hour color capability.
- c. Efforts are underway to upgrade the Improved Data Modem (IDM) data link capability on the Block 50 aircraft with the latest version of the High Speed Anti-Radiation Missile (HARM).
- d. Adding IDM to the Block 42 will improve the Air Force's capability to provide Close Air Support (CAS) for the Army.
- e. Global Positioning System (GPS) Integration adds GPS capability to the Block 30 and supports testing of GPS changes to other F-16 Blocks.

The F-16C/D development efforts are complemented by comprehensive Operational Flight Program (OFP) upgrades and flight tests.

The F-16, which received Milestone III approval in FY 1977, is an operational aircraft.

(U) FY 1998 (\$ in Thousands):

- (U) \$7,428 Initiated Link 16 Development/Integration Block 40/50
- (U) \$1,080 Initiated AIM-9X Development/Integration (Includes Block 40/50 Joint Helmet Mounted Cueing System (JHMCS))
- (U) \$2,500 Completed Color Display Development/Integration for Block 50; Started Block 40
- (U) \$6,400 Completed Multi-Mission Computer (MMC) on Block 50; Started MMC Block 40
- (U) \$2,296 Completed 600 Gallon Tank Flight Test
- (U) \$1,712 Completed Government Test/Support and Eval; CCIP Intg Eval, ALR-56 Support, Radar Eval, Y2K Demo, Halon Eval
- (U) \$4,264 Continued Unit Training Devices
- (U) \$27,244 Continued OFP Updates
- (U) \$1,375 Continued Advanced Weapons Integration
- (U) \$3,375 Continued Block 30 GPS
- (U) \$36,957 Continued Flight Tests DT&E
- (U) \$94,631 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1999
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational System Development	0207133F F-16 Squadrons	2671
<p>(U) <u>FY 1999 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$20,567 Continue Link 16 Block 40/50 - (U) \$4,982 Continue Joint Helmet Mounted Cueing System (JHMCS) Block 40/50 (formerly AIM-9X development) - (U) \$4,042 Continue Block 40 Color Display Development/Integration - (U) \$11,280 Continue Modular-Mission Computer (MMC) Block 40 - (U) \$3,928 Continue Unit Training Devices - (U) \$38,107 Continue OFP Updates - (U) \$1,215 Complete Advanced Weapons Integration - (U) \$2,731 Continue Block 30 GPS Integration Activities - (U) \$35,285 Continue Flight Tests DT&E - (U) \$14,100 Initiate F-16A/B Service Life Extension Program (Congressional direction) - (U) \$3,394 Identified as a source for SBIR - (U) \$139,631 Total <p>(U) <u>FY 2000 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$14,472 Complete Block 50 Link 16, Continue Block 40 - (U) \$10,270 Complete Block 50 JHMCS, Continue Block 40 - (U) \$586 Continue Block 40 Color Display Development/Integration - (U) \$8,286 Continue Block 40 MMC - (U) \$5,789 Continue Unit Training Devices - (U) \$43,166 Continue OFP Updates - (U) \$588 Complete Block 30 GPS Integration Activities - (U) \$29,363 Continue Flight Tests DT&E - (U) \$112,520 Total <p>(U) <u>FY 2001 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$5,000 Complete Block 40 Link 16 - (U) \$4,300 Complete Block 40 JHMCS - (U) \$1,500 Complete Block 40 Color Display Development/Integration - (U) \$5,000 Complete Block 40 MMC - (U) \$11,351 Continue Unit Training Devices - (U) \$32,660 Continue OFP Updates 		
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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207133F F-16 Squadrons				PROJECT 2671																																																												
<ul style="list-style-type: none"> – (U) \$32,647 Continue Flight Tests DT&E – (U) \$600 Initiate Joint Tactical Combat Training System (JTCTS) – (U) \$93,058 Total 																																																																	
<p>(U) B. <u>Budget Activity Justification:</u></p> <p>Since the development activities in this PE support an operational aircraft, these development activities are funded in the Operational System Development budget activity 7.</p>																																																																	
<p>(U) C. <u>Program Change Summary (\$ in Thousands)</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY 1998</u></th> <th style="text-align: center;"><u>FY 1999</u></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 1999 PB)</td> <td style="text-align: right;">95,333</td> <td style="text-align: right;">125,076</td> <td style="text-align: right;">119,522</td> <td style="text-align: right;">95,498</td> <td style="text-align: center;">Continuing</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">100,233</td> <td style="text-align: right;">140,076</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Cong Reductions</td> <td style="text-align: right;">-3,327</td> <td style="text-align: right;">-445</td> <td></td> <td></td> <td></td> </tr> <tr> <td> b. SBIR</td> <td style="text-align: right;">-1,582</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> c. Omnibus and other Above Threshold Reprogram</td> <td style="text-align: right;">1,557</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> e. Below Threshold Reprogramming</td> <td style="text-align: right;">-2,500</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 1999 PB</td> <td></td> <td></td> <td style="text-align: right;">-7,002</td> <td style="text-align: right;">-2440</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2000 PB</td> <td style="text-align: right;">94,631</td> <td style="text-align: right;">139,631</td> <td style="text-align: right;">112,520</td> <td style="text-align: right;">93,058</td> <td style="text-align: center;">Continuing</td> </tr> </tbody> </table> <p>(U) Significant Program Changes:</p> <p>FY99: \$3,394 identified as a source for SBIR \$15,000 Congressional Plus-UP for F-16 A/B Service Life Extension Program (SLEP).</p>							<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 1999 PB)	95,333	125,076	119,522	95,498	Continuing	(U) Appropriated Value	100,233	140,076				(U) Adjustments to Appropriated Value						a. Cong Reductions	-3,327	-445				b. SBIR	-1,582					c. Omnibus and other Above Threshold Reprogram	1,557					e. Below Threshold Reprogramming	-2,500					(U) Adjustments to Budget Years Since FY 1999 PB			-7,002	-2440		(U) Current Budget Submit/FY 2000 PB	94,631	139,631	112,520	93,058	Continuing
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BUDGET ACTIVITY 7 - Operational System Development					PE NUMBER AND TITLE 0207133F F-16 Squadrons				PROJECT 2671	
(U) D. <u>Other Program Funding Summary (\$ in Thousands)</u>										
	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) Aircraft Procurement (3010F), Line Item 7; F-16 C/D (MYP)	79,006	29,915	252,610	0	266,513	270,452	0	0	Continuing	Continuing
(U) Aircraft Procurement (3010F), Line Item 30, F-16 Mods *	165,965	238,440	246,598	268,105	240,318	198,638	205,360	201,150	Continuing	Continuing
(U) Aircraft Procurement (3010F), Line Item 67, Post Production Support	36,775	37,054	29,141	23,765	13,606	14,691	12,690	13,141	Continuing	Continuing
* 3010F, Line Item 7 Program Funding for FY00, FY02-03, is a plus-up for 10 A/C for each respective year.										
(U) E. <u>Acquisition Strategy:</u> The procurement of 30 additional Blk 50 aircraft, 10 FY00/10 FY02/10 FY03, for the active force will enable the AF to replace the Blk 15 F-16 A/B aircraft of two Air National Guard (ANG) Air Defense Fighter (ADF) squadrons with newer, more capable Blk 30 F-16 C/D aircraft from the active fleet. RDT&E funds will primarily be executed in developing improved capability, maintenance and safety mods. Operational Flight Program (OFP) software will be continuously updated to complement mod development efforts. The approach to contracting varies by individual project. Lockheed Martin Tactical Aircraft Systems (LMTAS) is the prime contractor on all systems except the simulator/trainer (Hughes Co.) and the 229 Engines (Pratt & Whitney). Contract types are CPIF, CPFF, FFP.										
(U) F. <u>Schedule Profile</u>										
	<u>FY 1998</u>			<u>FY 1999</u>		<u>FY 2000</u>		<u>FY 2001</u>		
	1	2	3	4	1	2	3	4	1	2
(U) CONTRACT MILESTONES										
(U) Link 16			*							
(U) JHMCS			*							
(U) MMC			*							
(U) Color Display			*							
(U) Digital Terrain System					X					
(U) Blk 30 GPS Integration Activities								X		
(U) Advanced Weapons Integration Dev						X				
(U) Blk 30 Fire Control Computer Mod					X					
* = Completed Event X = Planned Event										
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE
BUDGET ACTIVITY				February 1999
7 - Operational System Development				PROJECT 2671
PE NUMBER AND TITLE				
0207133F F-16 Squadrons				
(U) A. <u>Project Cost Breakdown (\$ in Thousands)</u>				
	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) Link 16 Block 50	5,628	15,115	9,186	0
(U) Link 16 Block 40	1,800	5,452	5,286	5,000
(U) MMC Block 40	2,500	11,280	8,286	5,000
(U) MMC Block 50	3,900	0	0	0
(U) Color Display Block 50	650	0	0	0
(U) Color Display Block 40	1,850	4,042	586	1,500
(U) AIM-9X Development/Integration:				
- (U) JHMCS Block 50	450	3,760	5,135	0
- (U) JHMCS Block 40	450	1,222	5,135	4,300
- (U) JHMCS Integration Eval	120	0	0	0
- (U) AIM-9X Development/Integration	60	0	0	0
(U) Unit Training Devices	4,264	3,928	5,789	11,351
(U) Advanced Weapons Integration	1,375	1,215	0	0
(U) Block 30 GPS Integration	3,375	2,731	588	0
(U) 600 Gallon Tank Tests	2,296	0	0	0
(U) Government Test/Support and Eval:				
- (U) CCIP Integration (Time and Material)	303			
- (U) ALR-56M Support	239	0	0	0
- (U) Radar Eval	280	0	0	0
- (U) Halon Replacement Eval	40	0	0	0
- (U) Y2K Demonstration (F-16)	850			
(U) OFP Updates	27,244	37,477	43,166	32,660
(U) Block 42 IDM Integration	0	630	0	0
(U) Flight Tests DT&E	36,957	35,285	29,363	32,647
(U) F-16 A/B SLEP	0	14,100	0	0
(U) Joint Tactical Combat Training System	0	0	0	600
(U) Identified as a source for SBIR	0	3,394		
(U) Total	94,631	139,631	112,520	93,058
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									DATE February 1999		
BUDGET ACTIVITY 7 - Operational System Development					PE NUMBER AND TITLE 0207133F F-16 Squadrons					PROJECT 2671	
(U) B. <u>Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
Performing Organizations:											
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1998	Budget FY 1998	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
Identified as a source for SBIR							3,394				3,394
<u>Product Development Organizations</u>											
CCIP (LMTAS)	T&M	Feb 97	6,200	6,200	5,081	303	0	0	0	0	5,384
Link 16 Blk 50 (LMTAS)	SS/CPFF	Apr 98	32,500	32,500	0	5,628	15,115	9,186	0	0	29,929
Link 16 Blk 40 (LMTAS)	SS/CPFF	Apr 98	15,524	15,524	0	1,800	5,452	5,286	5,000	0	17,538
MMC Blk 50 (LMTAS)	SS/CPIF	Jan 92	269,700	269,700	168,630	3,900	11,280	0	0	0	183,810
MMC Blk 40 (LMTAS)	SS/CP	Apr 98	27,500	27,500	0	2,500	0	8,286	5,000	0	15,786
Color Display Blk 50 (LMTAS)	SS/CPFF	Apr 98	8,069	8,069	0	650	0	0	0	0	650
Color Display Blk 40 (LMTAS)	SS/CPFF	Apr 98	8,069	8,069	0	1,850	4,042	586	1,500	0	7,978
JHMCS Blk 50 (LMTAS)	SS/CPFF	Apr 98	1,100	1,100	0	450	3,760	5,135	0	0	9,345
JHMCS Blk 40 (LMTAS)	SS/CPFF	Apr 98	1,100	1,100	0	450	1,222	5,135	4,300	0	11,107
JHMCS Int Study (LMTAS)	SS/CPFF	Apr 98	1,100	1,100	3,373	120	0	0	0	0	3,493
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BUDGET ACTIVITY 7 - Operational System Development					PE NUMBER AND TITLE 0207133F F-16 Squadrons						PROJECT 2671	
Contractor or Government	Contract Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior to FY 1998	Budget FY 1998	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program	
Activity	Vehicle	Date	EAC	EAC								
AIM/9X (LMTAS)	CPAF	Apr 98	32,360	32,360	55	60	0	0	0	0	115	
Trainer (Hughes)	FFP	Apr 97	44,979	44,979	10,399	4,264	3,928	5,789	11,351	0	35,731	
Smart Wpns (LMTAS)	CPIF	Dec 95	TBD	TBD	7,325	1,375	1,215	0	0	0	9,915	
GPS Integration (Various)	Various	Jul 97	20,200	20,200	11,856	3,375	2,731	588	0	0	18,550	
OFP Updates (LMTAS)	CPIF/T&M	Dec 95	TBD	TBD	86,763	27,244	37,477	43,166	32,660	Continuing	Continuing	
IDM Blk 42 (LMTAS)	FP	Nov 98	670	670	0	0	630	0	0	0	630	
JTCTS (TBD)	TBD	TBD	TBD	TBD	0	0	0	0	600	1,200	1,800	
F-16 A/B SLEP	TBD	TBD	TBD	TBD	0	0	14,100	0	0	Continuing	Continuing	
<u>Support and Management Organizations</u>												
ALR-56M Support					208	239	0	0	0	0	447	
Radar Eval					0	280	0	0	0	0	280	
Halon Eval						40	0	0	0	0	40	
<u>Test and Evaluation Organizations</u>												
600 Gallon Tank					0	2,296	0	0	0	0	2,296	
Flight Tests			TBD	TBD	86,034	36,957	35,285	29,363	32,647	Continuing	Continuing	
F-16 Y2K Demo			TBD	TBD		850					850	

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BUDGET ACTIVITY 7 - Operational System Development			PE NUMBER AND TITLE 0207133F F-16 Squadrons			PROJECT 2671	
<u>Government Furnished Equipment/Property:</u> Not Applicable <u>(U) B. Budget Acquisition History and Planning Information Continued (\$ in Thousands)</u>							
	<u>Total Prior to FY 1998</u>	<u>Budget FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
Identified as a source for SBIR			3,394				3,394
Subtotal Product Development	293,482	53,969	100,952	83,157	60,411	Continuing	Continuing
Subtotal Support and Management	248	559	0	0	0	0	807
Subtotal Test and Evaluation	86,034	40,103	35,285	29,363	32,647	Continuing	Continuing
Total Project	379,764	94,631	139,631	112,520	93,058	Continuing	Continuing
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